

CLAIMS

1. A system for marking a vehicle tire comprising:
 - a control unit;
 - 5 a first station;
 - a first reader located at said first station for reading a reference position on the tire and supplying said position to the control unit;
 - a second station;
 - a laser applicator located at the second station for applying indicia at a
 - 10 specific location on the tire; and
 - a positioning mechanism providing alignment between the laser applicator and the tire in response to the reference position on the tire read by the first reader for applying the indicia at the specific location by the laser application.
- 15 2. The system defined in claim 1 wherein the positioning mechanism for the laser applicator is movable in X-Y-Z coordinates.
3. The system defined in claim 1 wherein the first reader includes a first camera and lasers for determining the O.D., I.D., height and sidewall profile of the tire.
- 20 4. The system defined in claim 3 including a second camera located at a third station for providing a high resolution line scan picture of the tire.
5. The system defined in claim 4 including a rotational device for rotating the tire for correct placement with respect to the laser applicator based upon information
- 25 received from the second camera and first reader.
6. The system defined in claim 1 wherein the reference position on the tire read by the first reader is a machine readable barcode.
- 30 7. The system defined in claim 6 wherein the barcode contains information identifying the particular manufacturing plant making the tire, type of tire, and

individual serial number identifying said tire.

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8. The system defined in claim 1 wherein the reference position is human readable indicia on the tire.

9. The system defined in claim 8 wherein the human readable indicia identifies the manufacturing plant, tire size, and tire line.

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10. The system defined in claim 1 wherein the indicia applied to the tire by the laser applicator is human readable and identifies the week and year that said tire is cured.

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11. The system defined in claim 1 wherein the indicia applied to the tire by the laser applicator is a machine readable 2D symbol.

12. The system defined in claim 1 wherein the first reader reads information contained on the inboard and outboard sidewalls of the tire.

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13. A method for marking a vehicle tire comprising the steps of:

a) reading information contained on the tire at a first station and supplying said information to a control unit;

b) moving the tire to a second station;

c) providing a laser marking device at the second station;

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d) coordinating the position of said laser marking device and the tire in response to the information on the tire read at the first station; and

e) laser engraving additional information at a specific location on the tire at said second station.

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14. The method defined in claim 13 wherein step (d) includes rotating the tire to coordinate with the position of the laser marking device.

15. The method define in claim 13 wherein step (d) includes moving the laser

marking device in X-Y-Z coordinates for engraving the tire at the specific location in step (e).

5 16. The method defined in claim 13 wherein step (e) includes engraving machine readable coded information on the tire at said second station.

17. The method defined in claim 13 wherein step (e) includes engraving machine readable 2D symbols on the tire at said second station.

10 18. The method defined in claim 13 including the steps of determining certain physical characteristics of the tire at a third station; and positioning said tire at the second station based upon said characteristics.

15 19. The method defined in claim 18 wherein the step of determining certain physical characteristics include calculating the O.D., I.D., height and sidewall profile of the tire.

20 20. The method defined in claim 13 including the step of adjusting a laser engraver with respect to the tire such that a laser beam is perpendicular to a surface of the tire being engraved and at a correct focal length.